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EXAMINER				
CANTELMO, GREGG				
ART UNIT		PAPER NUMBER		
1795				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

# Office Action Summary

**Application No.**

10/553,206

**Applicant(s)**

SANDAKER, KJELL

**Examiner**

Gregg Cantelmo

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2010.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-26 is/are pending in the application.  
4a) Of the above claim(s) 15-17 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 18-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/22)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 2, 2010 has been entered.

### ***Response to Amendment***

2. In response to the amendment received June 2, 2010:
- a. Claims 15-26 are pending with claims 15-17 remaining withdrawn from consideration;
  - b. The restriction stands for reasons previously set forth and further in light of the Petition Decision on March 19, 2010;
  - c. The prior art rejections of JP '024 and Landau of record stand;
  - d. The remaining prior art rejections are withdrawn in light of the amendment to the claimed system.

### ***Election/Restrictions***

3. Applicant's election with traverse of Group I claims 8-17 (now claims 15-26) in the replies filed on November 2, 2009 and June 2, 2010 are acknowledged. The traversal is on the ground(s) that the claimed system and method share a commonly recited technical relationship. This is not found persuasive.

Art Unit: 1795

It should still be evident that the restriction between the apparatus of claims 8-14 and the process of claims 15-17 were not presented under the basis of species but rather directed, in accordance with a 371 stage application, with lack of unity of invention wherein the grouped inventions previously indicated were held (and are still held) to lack unity of invention with respect to a common novel inventive concept.

The prior action on the merits clearly establishes, at least a posteriori, that a lack of unity between the two groups exists since the originally filed apparatus claims were previously shown to be anticipated by numerous prior art references and thus lack any special technical feature. The MPEP clearly states that lack of unity of invention may be directly evident "a priori," that is, before considering the claims in relation to any prior art, **or may only become apparent "a posteriori," that is, after taking the prior art into consideration.** For example, independent claims to A + X, A + Y, X + Y can be said to lack unity a priori as there is no subject matter common to all claims. In the case of independent claims to A + X and A + Y, unity of invention is present a priori as A is common to both claims. However, if it can be established that A is known, there is lack of unity a posteriori, since A (be it a single feature or a group of features) is not a technical feature that defines a contribution over the prior art.

Therefore the Examiner maintains that lack of unity between the apparatus claims and method claims is proper and stands.

Art Unit: 1795

A showing of lack of unity as discussed above is a clear establishment that there is an absence of a common special technical relationship between the two inventions over the prior art.

Applicant previously asserted that the Examiner has no authority to ignore the requirements of 37 CFR 1.475 with respect to examination on the merits directed to a process and apparatus specifically designed to carry out the process.

This argument is not persuasive.

Contrary to Applicant's allegation, the Examiner has not "ignored" 37 CFR 1.475. At the onset, this rule clearly stipulates that examination of both a claimed process and apparatus "specifically designed" to carry out the claimed process can only be granted when both inventions present a common special technical feature. As discussed above, and as evidenced by the anticipatory references applied to the apparatus claims, the claimed apparatus was not held to present any common special technical feature.

In addition, 37 CFR 1.476(d) states:

"Lack of unity of invention may be directly evident before considering the claims in relation to any prior art, or after taking the prior art into consideration, as where a document discovered during the search shows the invention claimed in a generic or linking claim lacks novelty or is clearly obvious, leaving two or more claims joined thereby without a common inventive concept. In such a case the International Searching Authority may raise the objection of lack of unity of invention."

Art Unit: 1795

Hence since there was a clear absence of a common special technical feature between the claimed apparatus and process, restriction within the guidelines of the MPEP and 37 CFR 1.475-1.476 is evidently proper.

While the scope of the current claims has changed via various amendments, the restriction is directed to the originally filed claims wherein it was previously established that there is no common special technical feature between the system claims and method claims. Furthermore, the original system claims are not bound by the particular process steps of the method claims which further support the proper establishment of a lack of unity of invention between the two groups.

Applicant has referenced a portion of MPEP §1893.03(d) but within that same section of the MPEP the following is also recited: "A group of inventions is considered linked to form a single general inventive concept where there is a technical relationship among the inventions that involves at least one common or corresponding special technical feature. The expression special technical features is defined as meaning those technical features that define the contribution which each claimed invention, considered as a whole, makes over the prior art."

As previously stated:

In the construct of the original restriction, the prior action on the merits clearly establishes, at least a posteriori, that a lack of unity between the two groups exists since the originally filed apparatus claims were previously shown to be anticipated by numerous prior art references and thus lack any special

Art Unit: 1795

technical feature. The MPEP clearly states that lack of unity of invention may be directly evident "a priori," that is, before considering the claims in relation to any prior art, or may only become apparent "a posteriori," that is, after taking the prior art into consideration. For example, independent claims to A +X, A + Y, X + Y can be said to lack unity a priori as there is no subject matter common to all claims. In the case of independent claims to A + X and A + Y, unity of invention is present a priori as A is common to both claims. However, if it can be established that A is known, there is lack of unity a posteriori, since A (be it a single feature or a group of features) is not a technical feature that defines a contribution over the prior art.

As such the system claims and withdrawn method claims do not correspond to at least one common or corresponding special technical feature since the original system claims fail to recite any special technical features that define the contribution which each claimed invention, considered as a whole, makes over the prior art.

The requirement is still deemed proper and is therefore made FINAL.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 20 does not include a period at

Art Unit: 1795

the end of the claim therefore rendering the claim indefinite since the claim does not terminate.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 01-234024 (JP '024).

Note that the phrase "for protection of high temperature fuel cells that are subject to load variations more than five percent over a period of one hour" is still held to be intended use. The term "high temperature" is relative in the absence of either specifically claiming the fuel cell operating temperature or specifying the type of fuel cell. Additionally it is noted that the claimed energy can be any form of energy and in this interpretation is held to be electrical energy. With such, the following prior art rejection applies as described herein.

JP '024 discloses a fuel cell system comprising: a) at least one fuel cell 1; b) at least one buffer 9 for storage of surplus energy, arranged to function as a regulating system between the fuel cell and a energy consumption unit; wherein the system further comprises; e) a controller for dumping energy which is required to be led out of the system when the buffer 9 is full or according to need; and d) means 5 for transforming the energy stored in the buffer to a required form of energy, at greater energy need than the fuel cell can meet, or for transforming of energy which is not used and which shall be stored in another



Art Unit: 1795

form, or for transforming of energy stored in the buffer which shall be dumped in another form (Fig. 1 and abstract as applied to claim 18).

The system includes a component for converting the energy from DC to AC (abstract and Fig. 1 as applied to claim 19).

The system includes a number of subsystems which transports energy from the fuel cell to another part of the system (inverter, converter, external load, battery, etc., see Fig. 1 as applied to claim 20).

6. Claims 18-25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,976,506 (Landau).

Landau discloses a fuel cell system comprising: a) at least one fuel cell 12; b) at least one buffer 20 for storage of surplus energy, arranged to function as a regulating system between the fuel cell and a energy consumption unit; wherein the system further comprises; e) means for dumping thermal energy which is required to be led out of the system when the buffer 20 is full or according to need; into d) means for transforming the energy stored in the buffer 20 to a required form of energy, at greater energy need than the fuel cell can meet, or for transforming of energy which is not used and which shall be stored in another form, or for transforming of energy stored in the buffer which shall be dumped in another form (Fig. 1 and abstract as applied to claim 18).

The system includes subsystems which convert energy into another form (Fig. 1 as applied to claim 19).

The system includes a number of subsystems for transporting energy to another part of the system (Fig. 1 as applied to claim 20).

Art Unit: 1795

The buffer 20 is a pressure boiler (Fig. 1 as applied to claim 21).

The device for dumping is a steam exhaust from boiler 20 (Fig. 1 as applied to claim 22).

The device for dumping energy from the fuel cell includes a heat exchange feature in the boiler 20 and thus the heated coolant supplied from the fuel cell to the boiler is regarded as a heating element along with the undulating heat exchange conduit within the boiler 20 (Fig. 1 as applied to claim 23).

The energy dumping and transforming components includes a water-steam circuit where water is supplied to the boiler and heat exchange feature in the boiler 20 and steam is expelled from the boiler 20 (Fig. 1 as applied to claim 24).

The boiler 20 functions as a subsystem for recovering heat from the fuel cell and using the recovered head to heat the water supplied to the boiler into steam (Fig. 1 as applied to claim 25).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landau as applied to claim 18 above, and further in view of either JP 10-334936 (JP '936), U.S. Patent No. 4,622,275 (Noguchi) or U.S. Patent No. 5,482,791 (Shingai).

The difference between claim 26 and Landau is that Landau does not teach of the system further comprising a sub-system with a steam-condensate circuit with a steam turbine.

It is well known in the art to improve the efficiency of power systems by converting energy forms as needed. One known way is to convert steam supplied from a boiler to a turbine which subsequently converts the energy generated by the turbine from mechanical energy into electrical energy and also condenses the steam in the circuit (see JP '936 abstract, or Noguchi Fig. 1 and col. 6, ll. 50-57 or Shingai, Fig. 2 and corresponding disclosure).

The motivation for providing the system with a sub-system having a steam-condensate circuit with a steam turbine is that it improves the energy efficiency of the system.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Landau by providing the system with a sub-system having a steam-condensate circuit with a steam turbine as taught by either JP '936, Noguchi or Shingai since it would have improved the energy efficiency of the system.

### ***Response to Arguments***

8. Applicant maintains their argument that the claim preamble is entitled to patentable weight citing *Kropa v. Robie*.

This argument is still not persuasive for the following reasons.

First, the fact pattern in the instant application and that of *Kropa v. Robie* are not identical. Notably in the cited case the preamble was to an article claim

Art Unit: 1795

rendering an article to be an abrasive article. The instant claims are drawn to a fuel cell system and intended use for the system ("... for protection of high temperature fuel cells that are subject to load variations of more than five percent over a period of one hour ..."). It is plainly evident that the decision of *Kropa v. Robie* cannot be linearly applied to the instant claims since the statutory classes of invention are materially different and since the scope and language of the preambles of both fail to establish the same fact pattern. Thus the decision of this case, directed to a descriptive term applied to an article, cannot be found to be applicable to the instant claims which recite intended use for a fuel cell system.

Second, while intended use recitations and other types of functional language cannot be entirely disregarded (and they have not), in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). See also MPEP § 2114.

The manner of operating the device does not differentiate an apparatus claim from the prior art. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

The functional language of the preamble does not clearly limit the structure of the fuel cell.

Applicant argues that the fuel cell in JP '024 is a low temperature fuel cell however this argument is not persuasive since no part of the English abstract of this reference recites a low temperature fuel cell nor specifies the operating temperature of the fuel cell. In addition, as discussed above, the term "high temperature" fuel cell is relative in the absence of either specifically claiming the fuel cell operating temperature of specifying the type of fuel cell.

Applicant argues that JP '24 (JP '024) does not teach the preamble of claim 18.

As discussed above, the preamble is held only to recite functionality of the fuel cell system.

It has been established that while intended use recitations and other types of functional language cannot be entirely disregarded (and they have not), in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art

Art Unit: 1795

structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). See also MPEP § 2114.

The manner of operating the device does not differentiate an apparatus claim from the prior art. A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Applicant's response has failed to show any structural distinction between the claimed invention and the system of JP '024. Therefore in the absence of such, the prior art, having the same structural features is held to anticipate the claimed system.

Applicant argues that JP '024 does not teach the preamble language recited in claim 18. However the argument therein is still directed to unclaimed language, notably it should be plainly evident that the system still fails to recite an intended use or functionality of protection of high temperature fuel cells that are subject to load variations of at least 30 percent over a period of 15 seconds.

Art Unit: 1795

Claims 18-26 fail to recite any such functionality. Therefore, not only is Applicant's arguments that the preamble should be given weight, which are not persuasive as set forth above, but the arguments presented to the particular functionality of at least 30% over a period of 15 seconds are noticeably absent from the claims and thus also not germane to the claimed invention. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., protection of high temperature fuel cells that are subject to load variations of at least 30 percent over a period of 15 seconds) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Thus the rejection of claims 18-20 in view of JP '024 stands.

Applicant argues that Landau does not teach the preamble of claim 18.

As discussed above, the functional language of the preamble is not held to define the structure of the system of the claims, absent clear evidence to the contrary.

It has been established that while intended use recitations and other types of functional language cannot be entirely disregarded (and they have not), in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a

Art Unit: 1795

claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); In re Otto, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). See also MPEP § 2114.

The manner of operating the device does not differentiate an apparatus claim from the prior art. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

The functional language of the preamble does not clearly limit the structure of the fuel cell.

Applicant argues that the fuel cell in Landau is a low temperature fuel cell however this argument is not persuasive since Landau specifically teaches that the fuel cell electrolyte can be a metal oxide (col. 3, ll. 48-55) and metal oxide electrolyte fuel cells, commonly known as solid oxide fuel cells, are known to operate at "high temperatures".

Applicant maintains the argument that element 20 is not a storage or buffer for storing surplus energy, arranged to function as a regulating system



Art Unit: 1795

between the fuel cell and energy consumption unit, as claimed and that the buffer unit of Landau is integral with the power plant and not separate from the fuel cell.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the buffer is not integral with the fuel cell and is a separate element from the fuel cell) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

#### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregg Cantelmo/  
Primary Examiner, Art Unit 1795